

The IBUC Advantage

All IBUCs are equipped with cutting-edge intelligent technology:

- Highest quality & exacting performance guaranteed through individual unit testing over temperature
- Superior linearity for maximum useable output power
- Amplifier overdrive protection
- User-selectable AGC/ALC for optimal performance & compatibility with modem adaptive coding
- New high capacity microprocessor & extended M&C functions
- Weatherized RJ45 Ethernet interface for simplified connection

ULTIMATE MANAGEMENT & CONTROL

- » Local Web Interface & NMS-Friendly SNMP «
- » 70+ User Configurable Thresholds & Alarms «
- » Upgraded Event Log with 1,000 Sensor Readings «
- » Performance Trend Analysis Tools & Statistical logs «
- » Embedded Web Pages for Universal Web Browser Access «

Applications

The **IBUC 2G** delivers proven superior performance in high data rate, & higher order modulation satellite links. With its rugged, compact design, the Ka-band **IBUC 2G** is suitable for both mobile & long-term fixed satcom terminals. GaN advantages include higher power in a smaller outdoor enclosure and low power consumption. Terrasat's unique implementation is designed for long lifetime performance in demanding environments.

The Quad-Band version includes selectable multiband controls for multicarrier transmissions, deploying high versatility for your SATCOM terminals, and universal range in the Ka-band spectrum. Multiple sensors & a new, high-capacity microprocessor provide tools to optimize remote terminal performance. The **IBUC 2G** is a popular choice for satcom uplinks for telecom, government, defense and other demanding applications.

Options

- 2+1 Transmit Redundancy
- 1+1 Transmit Redundancy with Eco-Mode
- High Stability Internal 10 MHz Reference with Auto-Detection
- Mounting Brackets
- N-Type or F-Type Input Connectors
- Handheld Terminal
- AC or DC Input Models
- WGS (Wideband Global SATCOM) compatible
- Cyber Hardened Core M&C

Ka-Band | Quad-Band **IBUC 2G**

10W to 40W Compact GaN **IBUC** for
Multiband, Multi-orbit, and Multicarrier application
Four Software Selectable Sub-Bands

Universal Ka-Band
Range



New Cyber
Hardened
Core version
available

Multiband
Selectable
RF + IF

Multicarrier
Application

10W $P_{in,5W}$
to
40W $P_{in,20W}$

GaN
Tech
Amplifier

3
Year
Warranty

Note: Since not all the optional features can be combined, please, contact our sales team for further info at: Sales@Terrasatinc.com

Quad-Band 10W to 40W IBUC 2G For Multiband Multicarrier Application

Frequency Range	Software Selectable	
	RF	IF
Four Software Selectable Sub-Bands	Sub-band 1	27.5 to 28.5 GHz
	Sub-band 2	28.25 to 29.25 GHz
	Sub-band 3	29.0 to 30.0 GHz
	Sub-band 4	30.0 to 31.0 GHz
Note: Any RF can be software selected with any IF		

Input	RF	IF
VSWR/ Impedance	1.5:1 / 50 Ohm	
Input Connector	Type N Female (50 Ohm)	
Input Connector Options	Type F (75 Ohm)	
Input Power Detector	Standard Version ¹	WGS Version ²
Range Options:	-55 to -20 dBm	-35 to 0 dBm

Gain	RF	IF
Small Signal Gain (L-band to RF) with attenuator set to 0 dB		
	Standard Version ¹	WGS Version ²
10W	71 dB min	60 dB min
16W	73 dB min	62 dB min
20W	74 dB min	63 dB min
25W	75 dB min	64 dB min
40W	77 dB min	66 dB min

¹Terrasat's Standard Version has a higher gain to reduce the need for line amplifiers in long cable runs (IFL).

²The lower gain WGS Compatible Versions allow operations to drive the IF signal up to 0 dBm.

Attenuator Range	30 dB variable in 0.1 dB steps	
Gain Flatness		
Full Band	4 dB p-p max	for any Sub-Band
54 MHz	2 dB p-p max	for any Sub-Band
Gain Variation Over Temperature		
Open Loop	4 dB p-p max	for any Sub-Band
With AGC	1 dB p-p max	for any Sub-Band

RF Output	
Interface	WR28 UG Cover with Groove
VSWR	1.3:1 max

Output Power	P_{sat} (typ)	P_{Lin} (min)
10W	+40 dBm	+37 dBm
16W	+42 dBm	+39 dBm
20W	+43 dBm	+40 dBm
25W	+44 dBm	+41 dBm
40W	+46 dBm	+43 dBm

P_{Lin} is the maximum linear power as defined by MIL STD 188-164C

Level stability with ALC	± 0.5 dB
Output power detector range	Rated power to -20 dB
Power reading accuracy	± 1.0 dB max.
Spurious @ P_{Lin}	
In Band	-60 dBc
Out of Band	-60 dBc
	Complies with:
	- ETSI EN 301 360
	- ETSI EN 301 459
	- MIL-STD 188-164C
AM/PM	< 2Deg/ dB @ P_{Linear}
Output Noise Power Density	Tx < - 74 dBm/Hz

SSB Phase Noise	External Reference	IBUC 2G
	Minimum Specifications	
10 Hz	-125 dBc/Hz	-43 dBc/Hz
100 Hz	-150 dBc/Hz	-63 dBc/Hz
1 KHz	-160 dBc/Hz	-73 dBc/Hz
10 KHz	-165 dBc/Hz	-83 dBc/Hz
100 KHz	-165 dBc/Hz	-93 dBc/Hz
1 MHz	N/A	-103 dBc/Hz

External Reference (Multiplexed on TX IFL)

Frequency: 10 MHz Level: -12 to +5 dBm

Internal Reference is an optional feature that includes auto-detection of External Reference

Local Oscillator Frequency	Sense	Non-Inverting	Non-Inverting
		IF: 1.0 to 2.0 GHz	IF: 950 to 1950 MHz
Sub-Band 1	26.50 GHz	26.55 GHz	26.55 GHz
Sub-Band 2	27.25 GHz	27.30 GHz	27.30 GHz
Sub-Band 3	28.00 GHz	28.05 GHz	28.05 GHz
Sub-Band 4	29.00 GHz	29.05 GHz	29.05 GHz

IBUC Power Supply	DC	AC
Voltage	37 to 60 VDC (floating)	100 to 240 VAC (50Hz/60Hz)
Power Consumption	@ P_{Lin} / P_{Sat}	@ P_{Lin} / P_{Sat}
10W	130/175 W	140/180 VA
16W	135/180 W	150/200 VA
20W	150/200 W	170/220 VA
25W	270/360 W	300/400 VA
40W	330/440 W	360/480 VA

Monitor & Control - For Standard Units

Ethernet (HTTP, Telnet, SNMPv2c) via RJ45 Connector
RS232/485, Handheld Terminal via MS-Type Connector

Monitor & Control - For Cyber Hardened Core Versions (Optional)

Ethernet (HTTPS, SSHv2, Selectable SNMP V1, V2, V3 with USM and VACM) via RJ45 Connector

Network Protocols IPv4 and IPv6 Compatible

RS232 via MS-Type Connector

XSS (Cross Site Scripting)

Two NTP Servers Providing Redundancy

FIPS 140-2 compatible

The Cyber Hardened versions have embedded new high-end Cyber Security features, from hardware to software, including a new controller board and the new firmware.

For further details, refer to the Cyber Hardened IBUCs' datasheet at www.terrasatinc.com/products/ or at the [Cyber Hardened webpage](http://www.terrasatinc.com/products/) on <https://www.terrasatinc.com/terrasat-communications-launches-new-cyber-hardened-intelligent-bucs/>

Environmental

Operating Temperature

10W	-40°C to + 60°C
16W to 40W	-40°C to + 55°C

Relative Humidity

100% Condensing

Altitude

10,000 ft (3,000 m) ASL

Mechanical

	DC Powered	AC Powered
10W	10.5 x 6 x 4.2 in. 267 x 152 x 107 mm 9.5 lbs 4.3 kgs	10.5 x 6 x 4.6 in. 267 x 152 x 117 mm 10.5 lbs 4.8 kgs
16W to 40W	10.5 x 6 x 6.1 in. 267 x 152 x 155 mm 11.5 lbs 5.2 kgs	10.5 x 6 x 6.5 in. 267 x 152 x 165 mm 12.8 lbs 5.8 kgs

Specifications subject to change without notice.

Updated: September 16th, 2025

